CLEAN COPY OF CLAIMS

20. A process for clarification of water of raw alkalinity less than or equal to 50 ppm by chemical treatment, said process comprising:

adding to the water an effective amount of at least one aluminum polymer and an effective amount of at least one ammonium polymer, or blends thereof, to coagulate particles and to form a flocculated suspension thereof within a water phase;

said ammonium polymer or blends thereof includes at least one ammonium polymer having a molecular weight of at least approximately 500,000 to approximately 1,000,000

21. A process for clarification of water of raw alkalinity less than or equal to 50 ppm by chemical

treatment, said process comprising:

adding to the water an effective amount of at least one aluminum polymer and an effective amount of at least one ammonium polymer, or blends thereof, to coagulate particles and to form a flocculated suspension thereof within a water phase;

wherein the ratio (active mass basis) of ammonium polymer to aluminum polymer is greater than 1/20; and wherein,

said ammonium polymer or blends thereof includes at least one ammonium polymer having a molecular weight of at least approximately 1,000,000 to approximately 5,000,000.

22. A process for clarification of water of raw alkalinity less than or equal to 50 ppm by chemical

treatment, said process comprising:

adding to the water an effective amount of at least one aluminum polymer and an effective amount of at least one ammonium polymer, or blends thereof, to coagulate particles and to form a flocculated suspension thereof within a water phase,

said ammonium polymer or blends thereof includes at least one ammonium polymer having a molecular weight of at least approximately 5,000,000.

23. A process for clarification of water of raw alkalinity less than or equal to 50 ppm by chemical treatment, said process comprising:

adding to the water an effective amount of at least one aluminum polymer and an effective amount of at least one polyacrylamide, or blends thereof, to coagulate particles and to form a flocculated suspension thereof within a water phase,

said polyacrylamide having a molecular weight of at least approximately 5,000,000.

24. The process of claims 20, 21, 22 or 23 wherein the residual soluble aluminum of the water phase is less than 0.2 mg/L.

25. The process of claims 20, 21, 22 or 23 whereiion the IOC content of the water phase is less than 2 mg/L.

26. The process of claims 20, 21, 22 or 23 further including the addition of an effective amount of at least one aluminum salt or blends thereof.

27. The process of claim 23 wherein the polyacrylamide is selected from the class anionic, cationic or nonionic or combinations thereof.

28. The process of claims 20, 22 or 23 wherein the raw alkalinity of the water is less than 50 ppm.

29. The process of claims 20, 21, 22 or 23, wherein the water has a raw turbidity of 20 NTU or less.

30. The process of claims 20, 21 or 22 wherein the ammonium polymer includes DADMAC.

31. The process of claims 20, 21 or 22 wherein the ammonium polymer includes Epi-DMA.

32. The process of claims 20, 21, 22 or 23 wherein the aluminum polymer includes polyaluminum hydroxychloride.

33. The process of claims 20, 21 or 22 wherein the ammonium polymer contains quaternized nitrogen.

34. The process of claim 23 wherein the polyacrylamide contains quaternized nitrogen.

35. The process of claims 20, 21, 22 or 23 that includes adding ozone to the water in a purifying process to remove TOC and/or DOC.

36. The process of claims 20, 21 or 22 wherein said ammonium polymer and said aluminum polymer are blended in sufficient proportion and quantity to remove algae from said water during clarification.

37. The process of claim 23 wherein said polyacrylamide and said aluminum polymer are blended in sufficient proportion and quantity to remove algae from said water during clarification.

38. The process of claim 26 wherein said aluminum salt and said ammonium polymer are blended in sufficient proportion and quantity to remove algae from said water during clarification.

39. The process of claim 27 wherein said aluminum salt and said polyacrylamide are blended in sufficient proportion and quantity to remove algae from said water during clarification.

40. The process of claim 35 wherein said aluminum salt, ozone and ammonium polymer or polyacrylamide are added in sufficient proportion and quantity to remove algae from said water during clarification.

66. A process for removing algae from water by chemical treatment, said process comprising: contacting the algae in the water with an effective amount of at least one ammonium polymer

or blends thereof, wherein said ammonium polymer or blends thereof includes at least one ammonium polymer having a molecular weight of at least 1,000,000.

67. The process of claim 66 further including the addition of an effective amount of an algaecide to remove algae from the water.